

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-14 (cancelled)

15. (new) An optical fibre having a core of which a first longitudinal portion is of generally constant cross-sectional area and is covered by an inwardly facing reflective coating to cause electromagnetic radiation to travel along the first longitudinal portion of the core by means of internal reflection, and a second longitudinal portion is covered by a cladding material having a refractive index suitable for guiding the electromagnetic radiation along the second longitudinal portion of the core, and wherein the cross-sectional area of the first longitudinal portion of the core and its associated coating is less than the cross-sectional area of the second longitudinal portion of the core and its associated cladding.

16. (new) An optical fibre, as in Claim 15, in which an intermediate longitudinal portion of the core is positioned between the first and second longitudinal portions, an end of the cladding material terminates in the intermediate longitudinal portion, and at least part of the exterior of the cladding material of the intermediate portion is covered by an inwardly facing reflective coating.

17. (new) An optical fibre, as in Claim 15, in which the end of the cladding material is tapered, and the thinnest part of the taper is directed towards the first portion of the core.

18. (new) An optical fibre, as in Claim 17, in which the exterior of the tapered end of the cladding material has an inwardly facing reflective coating.

19. (new) An optical fibre, as in Claim 18, in which the reflective coating is thickest at the thinnest part of the taper.

20. (new) An optical fibre, as in Claim 15, in which a layer of cladding material is positioned between the core and the reflective coating of the first longitudinal portion, this layer of cladding material being substantially thinner than the cladding of the second portion of the core and sufficiently thin to permit electromagnetic radiation to travel along the first portion of the core by internal reflection.

21. (new) An optical fibre, as in Claim 15, in which the first portion of the core has a different cross-section to the second portion of the core.

22. (new) An optical fibre, as in Claim 15, in which the first and second longitudinal portions of the core are formed from different materials.

23. (new) An array of optical fibres comprising a plurality of optical fibres according to any preceding claim, in which the first longitudinal portions of the optical fibres are arranged closely side-by-side.

24. (new) An array of optical fibres, as in Claim 23, in which one end of each of the optical fibres terminates in an electromagnetic radiation detection device.

25. (new) A fibre optic coupling arrangement for coupling a light pipe to a clad optical fibre, the coupling arrangement comprising a light pipe comprising an optical fibre core having a reflective coating and a clad optical fibre comprising an optical fibre core with cladding surrounding the core, the optical fibre core of the light pipe being optically joined to the optical fibre core of the clad optical fibre such that electromagnetic radiation is able to travel from the light pipe to the clad optical fibre, wherein tapered cladding is provided in the region where the light pipe is optically joined to the clad optical fibre.

26. (new) A fibre optic coupling arrangement as in Claim 25, in which the tapered cladding material is at least partially covered by an inwardly facing reflective coating.